DOCUMENT RESUME

ED 349 386 CE 061 215

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TITLE Development of a Model for Measuring Student Satisfaction with Non-Traditional Degree Programs.
PUB DATE Mar 92
NOTE 22p.; Paper presented at the Annual Conference of the Southwestern Social Science Association (Austin, TX, March 18-21, 1992).
PUB TYPE Speeches/Conference Papers (150) -- Reports - Research/Technical (143)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS College Graduates; Higher Education; Item Banks; Models; *Nontraditional Education; *Occupational Mobility; *Participant Satisfaction; Program Effectiveness; Program Evaluation; *Student Attitudes; Surveys; *Test Construction; Test Items; Test Reliability; Vocational Education

ABSTRACT

A study focused on the development and pilot testing of a student satisfaction instrument, the results of which may be used to identify weaknesses and strengths of nontraditional degree programs. The literature review demonstrated little empirical evidence that could support positive or negative conclusions regarding student satisfaction within such programs. The instrument constructed consisted of items for each of four latent variable areas: internal/external rewards; curriculum concerns; workplace mobility; and program administration. All items were scored on a five-point Likert scale; subjects answered only those questions they thought applied to them. Two levels of information were obtained: level of satisfaction with item and level of awareness of item. A random sample of 100 graduates of the nontraditional program at Southwest Texas State University between 1986-91 were chosen as the pilot group; 54 returned complete information. Results indicated that the four satisfaction subscales manifested high levels of internal consistency and reliability. The result of a principal components factor analysis was a three-factor solution that accounted for 70.1 percent of the total variance. The three factors were subjects' perception of their degrees and the underpinning of the degree structure, actual work force mobility, and ideal work force mobility. Development of a model for assessing student satisfaction with a university program using the latent variables and identified factors was recommended. (Appendixes include 11 references and the instrument.) (YLB)

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DEVELOPMENT OF A MODEL FOR MEASURING STUDENT SATISFACTION WITH NON-TRADITIONAL DEGREE PROGRAMS

ED349386

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CE061215

Presented at the Southwestern Social Science Association Annual Conference, Austin, Texas, March 18-21, 1992.

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Introduction

In the last few years there has been a proliferation of non-traditional degree programs, and a tremendous growth in the numbers of distance learners along with the graying of campuses across the nation. Once dominated by the military, the non-traditional programs have now reached the most minute recesses of the nation and even beyond. An outgrowth of this explosion of learning has raised the issue of student satisfaction. Without empirical evidence of student and graduate satisfaction it remains difficult to justify the existence of programs which offer work life credit, non-collegiate credit or other forms of academic assistance for the mature student. Moreover, criticism from some sectors regarding the non-traditional programs has made it imperative for higher education to undertake a close examination of these programs.

This study focuses on the development, piloting, and presentation of a student satisfaction instrument, the results of which may be utilized, with some modification, to identify weaknesses and strengths of a wide variety of non-traditional programs. Initially, the review of literature demonstrates little empirical evidence which can support positive or negative conclusions regarding student satisfaction within such programs.

Review of the Literature

As far back as the late 1970's opponents of non-traditional learning opportunities have pointed to those programs as being models of mediocrity (Pierson & Springer, 1988). Conversely, there is evidence supporting the point that non-traditional programs are academically sound and acceptable. Pierson & Springer (1988), found a high degree of satisfaction among graduates of a large non-traditional program.

The difficulty in evaluating such programs often lies in the root problems of time. Programs often have shortages of data which then translates into problems of justification.

Moreover, the perceived reluctance of employers to hire non-traditional graduates leaves an additional need for empirical documentation.

Ulrickson and Wyatt (1982) indicated that employers shouldn't be reluctant to hire older graduates. The older students "...willingness and ability to take initiative and assume responsibility are above average..." (p.36). Moreover, older students "...reported satisfaction with their new jobs, with 87 percent believing that they enjoy more satisfaction than most..." (p. 37).

Certainly, program quality and perceptions of quality may effect the graduates satisfaction. Fonseca (1983) reported that "...nontraditional degree programs exist in an uneasy environment in traditional institutions..." (p. 69). Although he reported that his University made strides accommodating traditional and non-traditional baccalaureate programs this was "...achieved in large through increased communication about the degree..." (p. 70).

Many factors may be considered as possibilities that would effect student's satisfaction. Gender, race and other characteristics might be observed when assessing satisfaction. Dillard (1989) observed differences in black, white, and Caribbean students in a predominately "white" university in the southwest. Although the study was limited it pointed to the necessity of considering various demographic factors in any assessment of satisfaction.

Unfortunately, an overall assessment of the literature regarding full program evaluation is sparse. It is evident that the colleges and universities which promote non-traditional programs must look to evaluation as a means of presentation and promotion of their beliefs. Yet, because of the absence of instruments it has been and will be difficult to defend programs in the future.

Methodology

In order to address the universal requirements for an instrument to assess student satisfaction the researchers began the process by reviewing areas they considered important in regards to student satisfaction. Four latent variables were identified within the construct of student satisfaction. They were: 1) internal/external rewards, 2) curriculum concerns, 3) work place mobility, and 4) program administration. An item pool was generated for each of the latent variable areas and the initial instrument was subsequently drafted for review by a jury (DeVellis, 1991).

The jury consisted of four faculty members of the non-traditional education program at Southwest Texas State University. Based on this review of the instrument, initial changes were made to reflect ease of understanding and conciseness.

All items in the instrument were scored on a five point Likert scale in a consistently positive direction with high scores indicating satisfaction and low scores dissatisfaction. In addition the subjects were asked to only answer those questions they thought applied to them. This provided the researchers with two levels of information: 1) how satisfied is the sample with that item and 2) what is the level of awareness of that item.

After revision the instrument contained 27 items designed to measure satisfaction and 10 items for demographic control (see Appendix A). A random sample of 100 students who had graduated from the non-traditional program at Southwest Texas State University between 1986 and 1991 were chosen as the pilot group for the instrument. As follow up records are not maintained by the University, addresses of 36% of the participants were verified by telephone. This provided enough evidence of the soundness of the sample that the researchers felt

comfortable using it (Fox, Crask, and Kim; 1988). Of the 100 surveys mailed out only six were returned with the wrong address.

The surveys were mailed out with a scanable answer sheet included. Of the 100 surveys mailed 54 were returned with complete information, 7 were returned with incomplete information, and 6 were returned with improper address. A survey response rate of greater than 50% was defined as sufficient for the purposes of a pilot instrument (Babbie, 1983).

Results

Sample description. Table 1 reflects the demographic data for the sample population and corresponding applicable recent data from the parent institution. The population that responded to the survey was similar to the ethnic mix at Southwest Texas State University. Some 81.5% (white), 3.7% (black), and 14.8% (hispanics) responded, with approximately 41% of those being female. Close to 80% of the population were now employed full time and some 70% made over $25,000 per year. 55% of the respondents were between 36 and 50 years of age which is typical for a non-traditional program.

Reliability. The initial reliability for the instrument was established at $\alpha = .877$; however, questions which showed low individual item Alphas and low intercorrelations were removed from analysis (Cronbach, 1951). When these questions were removed the overall instrument reliability was $\alpha = .919$ for 22 questions (see Table 2) which is satisfactory for attitudinal measures (DeVellis, 1991; Nunnally, 1967). The reliabilities for the four subscales, though lower than the overall reliability were still acceptable. They were: 1) work place mobility $\alpha = .875$, 2) internal/external rewards $\alpha = .865$, 3) program administration $\alpha = .857$, and 4) curriculum concerns $\alpha = .759$.

Table 1: Comparison of Sample to Parent Population

Variable	Parent* %	Sample N	Sample %
Sex			
Male	47.8	32	59.8
Female	52.2	22	40.7
Ethnicity			
White	78.1	44	81.5
Black	5.2	2	3.7
Hispanic	14.3	8	14.8
Other	2.4	(0)	(0.0)
Total	100.0	54	100.0

*Statistics from Southwest Texas State University student profile for 1990-91.

Table 2: Item, subscale and survey reliabilities

Survey Items	n	$\bar{x}$	SD	Reliability
Workplace Mobility Subscale				**Item**
1. Degree provided opportunity for career development.	54	4.06	1.19	.753
2. Degree instrumental in obtaining current position.	40	2.98	1.46	.707
3. Income increased because of degree.	46	3.20	1.42	.611
4. Received promotion due to degree.	40	2.75	1.33	.565
5. Degree allowed career field change.	37	2.81	1.41	.356
6. Degree is applicable to todays workplace.	53	3.96	.96	.649
7. Degree enhanced promotional opportunities.	48	3.94	1.08	.610
In/Ex Rewards Subscale				
8. Degree had positive impact on life.	54	4.43	.90	.799
9. Perceived self-image improved with degree.	54	4.28	.90	.663
10. Confidence in applying for promotion.	50	3.96	1.03	.530
11. Proud of alumni status.	54	4.19	.93	.510
12. I would recommend this program to others.	54	4.26	1.08	.619
13. I would do it again.	54	3.78	1.38	.640
Program Administration Subscale				
14. Academic advisement was beneficial.	54	3.94	1.12	.325
15. Instructors encouraged participation.	54	4.15	.96	.551
16. Life credits influenced program selection.	54	4.07	1.34	.335
17. Satisfied with non-traditional program.	54	4.22	.98	.597
18. High quality program.	54	3.98	1.07	.745
Curriculum Concerns Subscale				
19. Courses beneficial in meeting life goals.	52	3.96	1.05	.668
20. Interdisciplinary curriculum suited for job market.	54	3.78	1.00	.532
21. Program meets the needs of students.	53	4.09	1.04	.670
22. Program comparable to a traditional program.	53	3.92	1.11	.430
Subscales				**Scale**
1. Workplace Mobility	30	3.37	.96	.875
2. Internal/External Rewards	50	4.15	.89	.865
3. Program Administration	54	4.07	.88	.857
4. Curriculum Concerns	50	3.93	.90	.759
				Survey
Satisfaction Survey	27	3.83	.65	.919

Scale Intercorrelations. The results of the scale intercorrelation matrix indicate a high degree of correlation (see Table 3) between the subscales of the instrument (mean r = .637). The most independent scale was work place mobility. The least independent scale was internal/external rewards.

Rank order analysis. Inventory items and subscales were ranked based on frequency of response to the item/subscale as well as by mean of the item/subscale. The four items with the lowest response rates also had the lowest mean scores and were all part of the same subscale, work place mobility (see Table 4). This subscale was ranked the lowest ($\bar{x}$ = 3.37) of the four.

The internal/external rewards subscale contained four of the five highest item means as well as having the highest overall mean ($\bar{x}$ = 4.15) and so was ranked first of the subscales. The second and third ranked subscales, program administration and curriculum concerns respectively, have overall means of 4.07 and 3.93. The mean difference between the rewards and curriculum subscales is $\bar{d}$ = .22 which is not statistically significant. However, the difference between curriculum (ranked third) and work place mobility is $\bar{d}$ = .56. This difference is significant at or below the .005 level (t = -2.64, df = 78, p > .005) using a t-test with a separate variance estimate. The differences between the first two ranked subscales and workplace mobility were even more significant. There was no significant difference for the first through third ranked subscales.

This difference is also reflected in the ranked frequencies for the subscales which have the top three ranked subscales, program administration, internal/external rewards, and curriculum concerns with a difference of 7% in response rate with one another; while the fourth ranked subscale, work place mobility had 37% fewer responses than second and third.

Table 3: Survey and subscale interrcorrelation matrix

Variables	1	2	3	4	5
1. Workplace mobility subscale	1.00	.556**	.466*	.579***	.852***
2. Rewards subscale		1.00	.820***	.693***	.867***
3. Program administration subscale			1.00	.696***	.819***
4. Curriculum concerns subscale				1.00	.830***
5. Complete survey					1.00

*p = .005
**p = .001
***p > .001

Table 4: Rank order of item and subscale frequencies and means.

Variable Name	Item			Subscale			Item			Subscale		
	f	%	Rank	*f*	%	Rank	$\bar{x}$	SD	Rank	$\bar{x}$	SD	Rank
1. Degree provided opportunity for career development.	54	100	6.5				4.06	1.19	9.5			
2. Degree instrumental in obtaining current position.	40	74	20.5				2.98	1.46	20			
3. Income increased because of degree.	46	85	19				3.20	1.42	19			
4. Received promotion due to degree.	40	74	20.5	30	56	4	2.75	1.33	22	3.37	.96	4
5. Degree allowed career field change.	37	69	22				2.81	1.41	21			
6. Degree is applicable to todays workplace.	53	98	13				3.96	0.96	12			
7. Degree enhanced promotional opportunities	48	89	18				3.94	1.08	14.5			
8. Degree had positive impact on life.	54	100	6.5				4.43	0.90	1			
9. Perceived self-image improved with degree.	54	100	6.5				4.28	0.90	2			
10. Confidence in applying for promotion.	50	93	16				3.96	1.03	12			
11. Proud of alumni status.	54	100	6.5	50	93	2.5	4.19	0.93	5	4.15	.89	1
12. I would recommend this program to others.	54	100	6.5				4.26	1.08	3			
13. I would do it again.	54	100	6.5				3.78	1.38	17.5			
14. Academic advisement was beneficial.	54	100	6.5				3.94	1.12	14.5			
15. Instructors encouraged participation.	54	100	6.5				4.15	0.96	6			
16. Life credits influenced program selection.	54	100	6.5	54	100	1	4.07	1.34	8	4.07	.88	2
17. Satisifed with non-traditional program.	54	100	6.5				4.22	0.98	4			
18. High quality program.	54	100	6.5				3.98	1.07	9.5			
19. Courses beneficial in meeting life goals.	52	96	14				3.96	1.05	12			
20. Interdisciplinary curriculum suited for job market.	50	93	16	50	93	2.5	3.78	1.00	17.5	3.93	.90	3
21. Program meets the needs of students.	54	100	6.5				4.09	1.04	7			
22. Program comparable to a traditional program.	50	93	16				3.92	1.11	16			

Gender and ethnicity analysis. There was no significant difference between the subscale mean scores and gender. However, for white and non-white categories there was a significant difference found for the program administration subscale. Non-whites are significantly more satisfied than whites ($t=2.04$, $df=23$, $p>.05$) with program administration.

Factor Analysis. A principle components factor analysis was conducted on the data using a varimax rotation and mean value substitution for missing values. A Bartlett Test of Sphericity (BTS=574.48, s=.000) and a Kaiser-Meyer-Olin Measure of Sampling Adequacy (KMO=.866) both indicated that the correlation matrix was suitable for a factor model (Norusis, 1988).

The result of the factor analysis was a three factor solution which accounted for 70.1% of the total variance (see Table 5). Factor one represented all the questions from the intrinsic/extrinsic rewards, program administration, and curriculum concerns subscales as well as the partial loading of one question and the full loading of another from the workforce mobility subscale. This factor can be described as subjects perception of their degree and the underpinning of the degree structure. This factor accounted for 53.2% of the variance.

The second factor accounted for 12% of the variance and is composed exclusively from items of the work place mobility scale. This factor can be described as actual workforce mobility. The final factor was also composed of elements of the workforce mobility subscale and accounted for 4.9% of the variance. This factor could be called ideal workforce mobility.

Recommendations

The results of this study provide the following general recommendations. The four satisfaction subscales generally manifested high levels of internal consistency and reliability.

Table 5: Commonality and factor solutions.

Variables	h^2	Factor 1	Factor 2	Factor 3
1	.780	.612	.534	
2	.898		.851	
3	.755		.846	
4	.662		.806	
5	.674			.760
6	.766	.781		
7	.681		.562	.405
8	.836	.844		
9	.772	.829		
10	.511	.651		
11	.803	.873		
12	.800	.888		
13	.659	.772		
14	.583	.696		
15	.642	.779		
16	.445	.548		
17	.797	.883		
18	.829	.898		
19	.690	.733		
20	.598	.720		
21	.809	.878		
22	.491	.679		
Total Variance	70.1%	53.2%	12.0%	4.9%

These scales may be considered for diagnostic and research purposes for other non-traditional education programs.

The three factors identified by the factor analysis, personal satisfaction with the degree, and the realistic and ideal value of the degree in the work place are important aspects of any assessment of a degree program. Institutions should use these factors as a model for identifying elements within their program for assessment. Additionally, the loadings on the factor analysis indicate that the latent variable of workplace mobility may actually have two separate dimensions. This alone may warrant further investigation.

A model for assessing student satisfaction with a university program could be developed using the latent variables and factors identified in this study. The model should be applied to non-traditional as well as traditional programs and be conducted across cohorts. These types of studies are missing from the literature are would be invaluable for university planning purposes.

Direct application of these results to this institution provided two major ideas. First, the lack of satisfaction with the realities of what a degree does for an individual called attention to the fact that college students in general and older non-traditional student in particular are often told that getting a degree is the way to get ahead. However, at no point in the curriculum is it explicitly explained how a degree can help you to get ahead. These results lead to the idea of installing a short workshop in the capstone course of this program to help students understand how to use their degree to its best advantage.

Second, the indication that non-whites were more satisfied with the programs administration than whites raised some very challenging issues. Unfortunately this study dose not in and of itself provide enough information as to why this difference should occur.

However, it does provide this program with a specific question that can be investigated. It may also provide a direction for other institutions in assessing their programs.

It is clear that further developmental work needs to be performed using instruments patterned after this model that measure similar components of adult student satisfaction. Particular attention should be placed on student satisfaction with traditional programs after graduation compared with non-traditional programs, as well as ethnic issues within non-traditional programs. Also, given the growing number of non-traditional students, a determination of the universality of the factors identified in this study would have important long reaching implications for future non-traditional programs.

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For further information concerning this project or the instrument used please contact Dr. Springer at (512) 245-2115.

APPENDIX A

SURVEY OF OCCUPATIONAL EDUCATION PROGRAM

Please read each item carefully and provide the response that best reflects your feelings about the program. All responses should be recorded by marking the appropriate letter in the blank to the left of the question.

A. Strongly disagree
B. Disagree
C. Neither agree nor disagree
D. Agree
E. Strongly agree
F. Not applicable

_____ 1. The attainment of the BAAS/BSOE degree has had a positive impact on my life.

_____ 2. The attainment of this degree provided an opportunity for career development.

_____ 3. I qualified for my current position as a direct result of attaining the BAAS/BSOE degree at SWTSU.

_____ 4. The professional development courses taught were beneficial to me in my progression toward my ultimate goals.

_____ 5. I believe that the interdisciplinary curriculum is suited for preparation in the job market today.

_____ 6. The BAAS/BSOE degree program is a quality program that satisfactorily meets the needs of the students.

_____ 7. The academic advisement I received through SWTSU was very beneficial to me in developing my degree plan.

_____ 8. The BAAS/BSOE curriculum provided a solid base to meet the academic standards to qualify for graduate school.

_____ 9. My personal income has increased as a result of attaining the BAAS/BSOE degree.

_____ 10. I believe that my self-image has improved as a direct result of attaining the BAAS/BSOE degree.

_____ 11. The instructors were supportive of the program and encouraged participation in it.

_____ 12. I have experienced negative discrimination because of my BAAS/BSOE degree.

_____ 13. The option of receiving academic credit for prior experience was an important factor in choosing this program.

_____ 14. I received a job promotion due to completion of my degree.

_____ 15. I would have attained the same level in my career even if I had never completed the program.

_____ 16. Generally, most of my academic skills and abilities are being used in my present job.

_____ 17. Acquisition of the degree allowed me to change career fields.

_____ 18. All things considered, I am satisfied with the non-traditional degree program at SWTSU.

_____ 19. Based on my experience, the BAAS/BSOE degree is acceptable in the workplace today.

_____ 20. My attainment of the degree has enhanced my ability to qualify for promotional opportunities.

_____ 21. Attainment of the degree has increased my confidence in applying for promotional opportunities.

A. Strongly disagree
B. Disagree
C. Neither agree nor disagree
D. Agree
E. Strongly agree
F. Not applicable

_____ 22. This program is comparable to the traditional program with regard to difficulty of instructional material.

_____ 23. The quality of the Occupational Education Program is very good.

_____ 24. Without the availability of the program to complete my degree off-campus and in the evenings, it is unlikely that I would have been able to attain it.

_____ 25. I am proud of my status as an alumni of the Occupational Education Program at SWTSU.

_____ 26. Based on my experience, I would recommend this degree program to others seeking to accomplish the same or similar goals.

_____ 27. If I were starting again, I would use this program to attain my degree.

DEMOGRAPHIC DATA:

_____ Sex A. Male B. Female

_____ Marital Status:
A. Married B. Divorced C. Never Married D. Widowed

_____ Age Group
A. 25 & under B. 26-30 C. 31-35 D. 36-40 E. 41-45
F. 46-50 G. 50-59 H. 60 & over

_____ Ethnic Group:
A. White (Non-Hispanic) B. Black C. Hispanic D. Asian E. American Indian F. Other

_____ Year Graduated with BAAS/BSOE:
A. 1986 B. 1987 C. 1988 D. 1989 E. 1990

_____ Overall GPA:
A. 2.0-2.4 B. 2.5-2.9 C. 3.0-3.4 D. 3.5-3.7 E. 3.8-4.0

_____ Highest Level of Education Attained:
A. BAAS/BSOE B. Masters C. Doctorate

_____ Career Classification:
A. Military B. Business C. Government D. Education E. Other

_____ Current Employment Status:
A. Full-time B. Part-time C. Self-employed D. Retired E. Unemployed

_____ Individual Annual Income Level:
A. Under $20,000 B. $20,000-24,999 C. $25,000-29,999 D. $30,000-34,999
E. 35,000-39,999 F. $40,000-49,999 G. $50,000 or more

Thank you for your participation. If you have any comments, please include them on the back of the questionnaire.